Calendar No. 758

106th Congress 2d Session	SENATE	REPORT 106–382

TECHNOLOGY ADMINISTRATION AUTHORIZATION ACT

R E P O R T

OF THE

COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION

on

S. 1407

AUGUST 25, 2000.—Ordered to be printed

Filed under authority of the order of the Senate of July 26, 2000

U.S. GOVERNMENT PRINTING OFFICE

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SENATE COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION

ONE HUNDRED SIXTH CONGRESS

SECOND SESSION

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Mr. MCCAIN, from the Committee on Commerce, Science, and Transportation, submitted the following

REPORT

together with

ADDITIONAL VIEWS

[To accompany S. 1407]

The Committee on Commerce, Science, and Transportation, to which was referred the bill (S. 1407) "A Bill to authorize appropriations for the Technology Administration of the Department of Commerce for fiscal years 2001, 2002, and 2003, and for other purposes", having considered the same, reports favorably thereon with an amendment in the nature of a substitute and recommends that the bill as amended do pass.

PURPOSE OF THE BILL

The purpose of the bill, as reported, is to authorize appropriations to the Technology Administration (TA) of the Department of Commerce (DOC) for fiscal year (FY) 2001, FY 2002, and FY 2003 as follows:

[In millions of dollars]

Area of consideration	FY 2001	FY 2002	FY 2003
Office of Under Secretary for Technology	8.716	8.977	9.246
Teacher Science and Technology Enhancement Institute	0.750	0.773	0.796
Experimental Program to Stimulate Competitive Technologies Program	3.000	3.000	3.000
Scientific and Technical Research and Services	337.508	356.071	375.655

79–010

[In millions of dollars]

Area of consideration	FY 2001	FY 2002	FY 2003
Industrial Technology Services	271.015	275.421	264.960
Construction and Maintenance	35.879	36.955	38.064
Total	656.868	681.197	691.721

BACKGROUND AND NEEDS

Under the leadership of the Under Secretary of Commerce for Technology, TA provides advice on technology policy, supports technology development programs, and disseminates technology information. The Under Secretary oversees the three major components of the TA: (1) the Office of Technology Policy (OTP), (2) the National Institute of Standards and Technology (NIST), and (3) the National Technical Information Service (NTIS). The mission of OTP is to evaluate, develop, and promote policies and programs that facilitate private sector innovation and U.S. industrial competitiveness. NIST (formerly the Bureau of Standards) is, by far, the largest of the three TA activities. NIST conducts in-house research and development as well as standards activities in support of U.S. industry. In addition, through its Industrial Technology Services (ITS) account, NIST funds two external technology grant and assistance programs: the Advanced Technology Program (ATP), which provides grants to companies to undertake initial high risk high-tech research to develop promising technologies with economic potential (but does not support product development), and the Manufacturing Extension Partnership (MEP), which provides manufacturing assistance to small- and medium-sized businesses through regional centers. NIST also manages the Malcolm Baldridge National Quality Award, which is given to U.S. companies that excel in quality achievement and total quality management. NTIS is a self-financed agency that collects and sells to the public technical information generated by the U.S. government and foreign sources.

In recent years, of all the TA activities, the greatest controversy has involved NIST's two grant programs—ATP and MEP. Proponents of ATP argue that the program strengthens the U.S. economy by providing U.S. companies with a critical helping hand by funding peer-reviewed, high risk, yet promising, commercially-relevant research ventures that private capital sources would be unlikely to finance because of the risk and unlikelihood of a quick return on investment. However, opponents of ATP view the program as "corporate welfare" and believe that the goal of increased U.S. competitiveness is better achieved through a combination of deregulation, tax reform, tort reform, and more vigorous enforcement of trade agreements. MEP has been viewed by critics of NIST in a more favorable light. Through its centers in each state and over 300 smaller local activities, MEP provides assistance to the Nation's approximately 381,000 small- and medium-sized firms seeking to modernize their plants. Proponents assert that this is precisely the kind of assistance that these firms need because it is difficult for owners and managers of small companies to find high-quality, unbiased information, advice, and assistance. In addition,

many of these firms lag behind their foreign competitors in technology and operations, leading larger firms to look increasingly for offshore suppliers. However, some believe that the MEP concept of using extension agents to visit industries to identify and to address their needs is not a cost-effective model and is particularly inefficient in rural states where the agents must travel great distances. Opponents also argue that the MEP makes insufficient use of advanced computer networking to deliver needed technical assistance to U.S. companies.

LEGISLATIVE HISTORY

On February 7, 2000, the Administration submitted its FY 2001 budget request for TA to the Congress. On April 21, 1999, the Subcommittee on Science, Technology, and Space held an oversight hearing on TA's programs at which time testimony was heard from Gary Bachula, Acting Under Secretary of Commerce for Technology and Raymond Kammer, Director, NIST.

On July 21, 1999, Senator Frist, Chairman of the Subcommittee, introduced S. 1407, a bill to authorize appropriations for TA for FY 2000, FY 2001, and FY 2002.

On April 13, 2000, the Committee met in executive session and, on a voice vote, ordered the bill, as amended, to be reported.

SUMMARY OF MAJOR PROVISIONS

As reported, S. 1407 would authorize funding for TA for FY 2001, FY 2002, and FY 2003 and make several changes to the programs of TA. Major provisions of S. 1407, as reported, include:

1. *Authorization of Appropriations.* A total of $656.9 million would be authorized for the TA for fiscal year (FY) 2001, $681.2 million for FY 2002, and $691.7 million for FY 2003. The authorized funding level for TA is allocated among its activities as indicated in the chart under Purpose of the Bill.

2. *National Institute of Standards and Technology Act Amendments.* Substantial changes would be made to the manner in which ATP is administered. Specifically, the participation of large companies would be restricted to joint ventures or partnerships only, and all competitions would be required to be general and open to all applicants.

3. *Experimental Program to Stimulate Competitive Technologies.* The Experimental Program to Stimulate Competitive Technologies would be transferred from OTP to NIST with an annual authorization level of $3 million.

ESTIMATED COSTS

In accordance with paragraph 11(a) of rule XXVI of the Standing Rules of the Senate and section 403 of the Congressional Budget Act of 1974, the Committee provides the following cost estimate, prepared by the Congressional Budget Office:

U.S. CONGRESS,
CONGRESSIONAL BUDGET OFFICE,
Washington, DC, May 1, 2000.

Hon. JOHN MCCAIN,
Chairman, Committee on Commerce, Science, and Transportation, U.S. Senate, Washington, DC.

DEAR MR. CHAIRMAN: The Congressional Budget Office has prepared the enclosed cost estimate for S. 1407, the Technology Administration Authorization Act for Fiscal Years 2001, 2002, and 2003.

If you wish further details on this estimate, we will be pleased to provide them. The CBO staff contacts are Mark Hadley (for federal costs) and Shelley Finalyson (for the state and local impact).

Sincerely,

BARRY B. ANDERSON
(For Dan L. Crippen, Director).

Enclosure.

S. 1407—Technology Administration Authorization Act for Fiscal Years 2001, 2002, and 2003

Summary: S. 1407 would authorize appropriations for fiscal years 2001 through 2003 for various technology programs administered by the Department of Commerce. Funds would be authorized for the National Institute of Standards and Technology (NIST), for the office of the Under Secretary for Technology, and for the Experimental Program to Stimulate Competitive Technologies (EPSCOT). The bill would authorize several new initiatives at NIST, including a science and technology training program for teachers, and an interagency board concerned with global positioning systems. Other provisions of the bill would modify existing programs, and would authorize NIST to transfer title to tangible personal property to recipients of funding from the Advanced Technology Program (ATP) under certain conditions. The bill also would require NIST and office of the Under Secretary to submit reports to the Congress on the status of the manufacturing sector in the digital age and the activities of the national laboratories.

Assuming appropriation of the authorized amounts, CBO estimates that implementing S. 1407 would cost about $2 billion over the 2001–2005 period. Provisions regarding the transfer of title to personal property could affect direct spending; therefore, pay-as-you-go procedures would apply to the bill. CBO estimates, however, that the impact on direct spending would not be significant in any one year.

S. 1407 contains no intergovernmental or private-sector mandates as defined in the Unfunded Mandates Reform Act (UMRA) and could benefit state and local governments.

Estimated cost to the Federal Government: The estimated budgetary impact of S. 1407 is shown in the following table. The costs of this legislation fall within budget function 370 (commerce and housing credit). For the purposes of this estimate, CBO assumes that all authorized amounts will be appropriated near the beginning of each fiscal year and that outlays will follow the historical spending patterns for the affected programs.

	By fiscal year, in millions of dollars					
	2000	2001	2002	2003	2004	2005
SPENDING SUBJECT TO APPROPRIATION [1]						
Spending Under Current Law:						
Budget Authority [2]	642	0	0	0	0	0
Estimated Outlays	648	420	210	76	33	11
Proposed Changes:						
Authorization Level	0	657	677	692	0	0
Estimated Outlays	0	316	524	633	328	145
Spending Under S. 1407:						
Authorization Level [2]	642	657	677	692	0	0
Estimated Outlays	648	736	734	709	361	156

[1] This bill could affect direct spending if NIST chose to transfer title to some of the personal property acquired under ATP that otherwise would have been sold as surplus property under current law. Based on information provided by NIST, however, CBO estimates that the potential loss in sale receipts would not be significant in any one year.

[2] The 2000 level is the amount appropriated for that year for specified technology programs with the Department of Commerce.

Pay-as-you-go considerations: The Balanced Budget and Emergency Deficit Control Act sets up pay-as-you-go procedures for legislation affecting direct spending and receipts. Provisions in S. 1407 authorizing NIST to convey title to personal property could reduce offsetting receipts (a form of direct spending), but CBO estimates that any loss of receipts would not be significant in any single year.

Estimated impact on state, local, and tribal governments: S. 1407 contains no intergovernmental mandates as defined in UMRA, but several sections of the bill would affect grant programs that benefit state and local governments. The bill would authorize appropriations totaling about $352 million for the 2001–2003 period for the Manufacturing Extension Partnership (MEP), a program jointly financed by the federal government and state or local agencies. The MEP is a program designed to enhance productivity and technological performance in the United States and is made up of the State Technology Extension Program (STEP) and the Manufacturing Extension Centers Program (MECP). STEP provides technical assistance and planning grants to states to develop or revitalize their technology program. MECP involves cooperative agreements between the federal government and nonprofit institutions that are often funded by state or local development agencies or universities.

S. 1407 also would authorize appropriations for the Experimental Program to Stimulate Competitive Technology. This is a program to strengthen the technological competitiveness of states that have historically received less federal research and development funds than other states. These grants require at least a 25-percent match and are available to consortia including state and local governments. The bill would transfer the program from the Under Secretary of Commerce to NIST and authorize appropriations of $3 million annually for fiscal years 2001 through 2003. Any costs to state or local governments to participate in these technology programs would be voluntary.

Estimated impact on the private sector: This bill would impose no new private-sector mandates as defined in UMRA.

Estimated prepared by: Federal Costs: Mark Hadley. Impact on State, Local, and Tribal Governments: Shelley Finlayson. Impact on the Private Sector: Jean Wooster.

Estimate approved by: Peter H. Fontaine, Deputy Assistant Director for Budget Analysis.

REGULATORY IMPACT STATEMENT

In accordance with paragraph 11(b) of rule XXVI of the Standing Rules of the Senate, the Committee provides the following evaluation of the regulatory impact of the legislation, as reported:

NUMBER OF PERSONS COVERED

S. 1407, as reported, would reauthorize appropriations for DOC's TA for fiscal years 2001, 2002, and 2003. The TA conducts measurements and standards activities in support of U.S. industry and manages technology grant and assistance programs to increase U.S. competitiveness. The Committee believes that the bill will not subject any individuals or businesses affected by the bill to any additional regulation.

ECONOMIC IMPACT

Providing for continual funding would allow NIST to continue its support of U.S. industries by conducting its standards and measurements setting functions. NIST's grants and assistance programs would continue to assist U.S. businesses to be more competitive in international markets and would continue to benefit the general public through contributing to the economic growth of the country from investments in new science and technology ventures that otherwise would not have been undertaken.

PRIVACY

This legislation would not have an adverse impact on the privacy of individuals.

PAPERWORK

This legislation would not increase the paperwork requirement for private individuals or businesses. The legislation would require three reports to be submitted to the Senate Committee on Commerce, Science, and Transportation and the House Committee on Science: (1) the Director of NIST would be required to submit a report on the manufacturing sector; (2) the Assistant Secretary for Technology Policy would be required to submit a report on the national laboratories; and (3) the Director of NIST would be required to submit a report on technical standards.

SECTION-BY-SECTION ANALYSIS

Section 1. Short title

This section would permit the reported bill to be cited as the "Technology Administration Authorization Act for Fiscal Years 2001, 2002, and 2003."

Section 2. Definitions

This section would provide the definitions of several key terms used throughout the report bill.

Section 3. Authorization of appropriations for scientific and technical research and development

Subsection (a) would authorize $338 million for Scientific and Technical Research Services for FY 2001, $356 million for FY 2002, and $376 million for FY 2002.

The Committee continues to recognize NIST's important and legitimate role in promoting U.S. industrial competitiveness by working with industry to develop and apply measurements, standards, and technology. The basic research and standards work at NIST is an important function.

The Committee continues to recognize the role of quality as an integral part of today's business management practices. The Committee commends NIST for its work in establishing the Malcolm Baldridge Quality Award criteria, which is used by thousands of organizations as a general performance and business excellence model.

As standards develop that allow interoperability, manufacturers and retailers can more closely integrate their supply chains. A March 1999 NIST study estimates that lack of interoperability costs the automotive supply chain $1 billion per year. The majority of these costs are attributable to the time and resources spent correcting and reformatting data files that are not usable by those receiving the files. While a general international Standard for the Exchange of Product Model Data (STEP) exists to facilitate the exchange of these data files, much more work needs to be done to apply that standard to specific industries. This section of the reported bill includes $4 million for FY 2001 for NIST to continue cooperation with the automotive and aerospace industries into the pilot stage and with other key manufacturing sectors on implementing STEP.

The funds authorized in this section of the reported bill also would include NIST's Minority Serving Initiative. This important new initiative would allow NIST to foster partnerships with these institutions which educate a disproportionately large number of the nation's minority scientists and engineers. It would also expand the post-doctoral fellowship program, bringing more of these scientists and engineers to work at NIST.

In Subsection (b), NIST would be authorized $36 million for FY 2001, $37 million for FY 2002, and $38 million for FY 2003 for the Construction and Maintenance account in order to fund needed new construction and renovations at NIST.

In Subsection (c), NIST would be provided $750,000 for FY 2001, $773,000 for FY 2002, and $796,000 for FY 2003 for the Teacher Science and Technology Enhancement Institute program. The Committee is disappointed that the President's request did not include funding for this program, which was established by the Technology Administration Act of 1998. The Committee believes that this program will greatly assist teachers in better understanding the relationship between technology and commerce. The need for human capital has been identified as a major barrier to continual growth by the technology community, more so than technology and finance. To ensure that American industry continues to be the dominant player in the global economy, NIST must do its part to ensure a readily available source of human capital exists.

Section 4. Authorization for the Office of the Under Secretary for Technology

Subsection (a) would authorize $8,716,000 for FY 2001, $8,977,000 for FY 2002, and $9,246,000 for FY 2003 for the activities of the Under Secretary for Technology and OTP.

Subsection (b) would authorize $590,000 for FY 2001, $608,000 for FY 2002, and $626,000 for FY 2003 of the funds in Subsection (a) for the Office of Space Commercialization.

The Committee has steadfastly supported the Federal investment in research and development. The products of that investment, scientific and technical documents, are archived and disseminated by NTIS. The Committee has not endorsed the closure of NTIS, as proposed by the Secretary of Commerce. The proposal submitted to the Committee by the Secretary is incomplete and does not address several issues that were raised during a hearing held by the Committee on October 21, 1999. The Committee intends to review the status of the agency further before making a final decision.

Section 5. Authorization of appropriation for industrial technology services

This section would authorize $271.02 million for ITS for FY 2001, $275.42 million for FY 2002, and $264.96 for FY 2003. The ITS account funds NIST's ATP and MEP. There would be authorized to be appropriated for ATP $146.88 million for FY 2001, $151.28 million for FY 2002, and $155.82 million for FY 2003. There would be authorized to be appropriated for the MEP program $124.14 million for FY 2001, $119.14 million for FY 2002, and $109.14 million for FY 2003.

The MEP FY 2001 funding level is $10 million above the requested level and would allow accelerated implementation of the e-commerce initiative for support of small manufacturing firms. This $10 million would increase support for the small manufacturers by more than 100 percent above the requested level for a total of $19 million for FY 2001. The reported bill provides a total of $15 million for FY 2002 and $5 million for FY 2003 for this e-commerce initiative. The Committee believes that accelerated funding over the next two years is very important and necessary to ensure that the small manufacturers remain competitive.

The FY 2001 funding level of $147 million for ATP is a 3 percent increase above the FY 2000 appropriated level. The funding level for FY 2001 and FY 2002 also represents a 3 percent increase over the previous year. The Committee continues to be concerned about ATP's failure to use $26 million in funds for new awards in FY 1999 and the program's decision to de-obligate $28 million previously dedicated to projects in FY 1999.

The Committee recognizes that a major element of the Nation's transition to electronic commerce is the need to improve manufacturing productivity by ensuring that electronic data can be exchanged accurately and efficiently. Over the past two years, representatives from several government agencies (Departments of Energy, Defense, and Commerce and the National Science Foundation) and many companies in the manufacturing sector worked to develop roadmaps that address generic future manufacturing infrastructure requirements. The resulting documents, the Integrated Manufacturing Technology Roadmaps, laid out common visions in

the areas of information systems for manufacturing enterprises, modeling and simulation, manufacturing processes and equipment, and technologies for enterprise integration. Integrated Manufacturing Technology Initiative is the name given to the implementation of these roadmaps. The Committee supports the budget request of $1 million to support the federal government role in this public-private partnership and the establishment of a convening organization that will use the Integrated Manufacturing Technology Roadmaps as its guide.

Section 6. National Institute of Standards and Technology Act amendments

Section 6 of the reported bill would make several amendments to the NIST Act.

Subsection (a) would amend the NIST Act, making changes to the process by which ATP operates. Specifically under subsection (a), paragraph (1) would require the reviewers, as part of the current technical merit review process, to make a determination that the research projects in question would not go forward in a timely manner without Federal assistance. In addition, each program applicant would be required to certify that an unsuccessful attempt has been made to secure private market funding for the research project involved. In providing the certification, each applicant would be required to include a written narrative description of the efforts made to secure the funding. Paragraph (1) also would restrict a large business' participation to joint ventures only, and the joint ventures would have to include one or more small businesses.

In paragraph (2), the term "large business" would be defined as a business with gross annual revenues greater than $2.5 billion. A small business would be defined in accordance with section 3(a)(1) of the Small Business Act. A medium business would be a business that is neither a small business nor a large business.

Paragraph (3) would make a technical correction to the Act to redesignate subsection (j) of the existing code as subsection (m).

Paragraph (4) would authorize the Director to grant an extension beyond the five year deadline for completing a project provided that the extension would result in no additional costs to the Federal government and is in the Federal government's interest. Paragraph (4) also would allow the Secretary to vest title to tangible personal property in ATP grant recipients as long as (a) the property is purchased as part of the ATP grant, and (b) the Secretary determines that the vesting furthers the objectives of NIST. The vesting made under this subsection would be made only if subject to the limitations prescribed by the Secretary, and only if vesting causes no additional cost to the Federal government.

Subsection (b) would amend the NIST Act provisions which govern ATP to allow non-industry joint venture participants such as universities and non-profits participating as ATP awardees and subawardees the option of retaining title to the intellectual property generated under ATP programs where the non-government parties to the ATP project agree it will serve the interests of the participants in the project. This change will provide a greater opportunity for industry to work together with universities and other nonprofit organizations. The amendment language removes any restriction requiring patent title to be held by nonprofit companies

and permits the participants to agree among themselves as to where patent title will vest. The amendment also provides a preemption of the requirements of chapter 18 of title 35 of the U.S. Code as required by that chapter. It furthers stipulates that these provisions are not retroactive. Subsection (b) of the reported bill would eliminate all focus program competitions. Specifically, this subsection would require all awards to be based on general open competitions.

Section 7. Reports

Subsection (a) would require the Director, within six months after enactment, to submit a report to the Senate Committee on Commerce, Science, and Transportation and the House of Representatives Committee on Science on the manufacturing sector addressing such issues as an expanded definition of and the role of manufacturing in the digital age; necessary revisions to existing federal programs to reflect requirements imposed by the knowledge-based economy; and needs of small businesses for technical assistance.

Subsection (b) would require the Assistant Secretary for Technology Policy, within nine months after enactment, to submit a report to the Senate Committee on Commerce, Science, and Transportation and the House of Representatives Committee on Science on whether the laboratories have clearly defined and focused missions; barriers to maintaining competitive centers of excellence; laboratory collaborations; strengthening laboratories; and any recommendations to increase the efficiency and effectiveness of the national laboratories.

Subsection (c) would require the Director, in consultation with the U.S. Trade Representative Office and other appropriate agencies, to submit a report to the Senate Committee on Commerce, Science, and Transportation and the House of Representatives Committee on Science, within six months of enactment, on the role and impact of international technical standards on global commerce and international trade; the role of national standards in international commerce and trade policies; the timeliness of domestic and international process and its impact on development of new markets and new technologies; market, industry, and technology inputs to the standards process; access in representation to the domestic and international standards process; and any recommendation for changes to the domestic standards process.

Section 8. Authorization of interagency support for global positioning system

This section would authorize interagency funds and other forms of support for the activities of the Interagency Global Positioning System Executive Board (IGEB) including the Executive Secretariat, which is housed within the Department of Commerce. This section does not authorize any additional funds to any agency but does exempt the IGEB from the general legislative ban on multiagency funding of executive boards.

Due to the dual military and civilian nature of the Global Positioning System (GPS), the Committee supports the involvement of civilian agencies in the management of the GPS. Furthermore, because of the jointly held responsibilities of the IGEB, which is co-

chaired by the Departments of Defense and Transportation and includes the Departments of Commerce, State, Agriculture, Justice, and Interior as well as the Joint Chiefs of Staff and the National Aeronautics and Space Administration, the Committee supports allowing multi-agency contributions to fund the activities of the IGEB, including the operations of the Executive Secretariat.

Section 9. Transfer of EPSCoT to NIST

Subsection (a) would transfer the Experimental Program to Stimulate Competitive Technology (EPSCoT) from OTP to NIST. The Committee is disappointed that the Administration did not include funding for the program as part of the FY 2001 budget request.

Subsection (b) would authorize $3 million for FY 2001, $3 million for FY 2002, and $3 million for FY 2003 for EPSCoT.

Consistent with the Technology Administration Act of 1998, the Committee encourages the Director to ensure that states are working toward established achievement criteria for participating in the program. It is hoped that as more states meet this criteria, their need to participate in the program may be eliminated.

CHANGES IN EXISTING LAW

In compliance with paragraph 12 of rule XXVI of the Standing Rules of the Senate, changes in existing law made by the bill, as reported, are shown as follows (existing law proposed to be omitted is enclosed in black brackets, new material is printed in italic, existing law in which no change is proposed is shown in roman):

NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY ACT

SEC. 28. ADVANCED TECHNOLOGY PROGRAM. [15 U.S.C. 278n]

(a) There is established in the Institute an Advanced Technology Program (hereafter in this Act referred to as the "Program") for the purpose of assisting United States businesses in creating and applying the generic technology and research results necessary to—

(1) commercialize significant new scientific discoveries and technologies rapidly; and

(2) refine manufacturing technologies.

The Secretary, acting through the Director, shall assure that the Program focuses on improving the competitive position of the United States and its businesses, gives preference to discoveries and to technologies that have great economic potential, and avoids providing undue advantage to specific companies. In operating the Program, the Secretary and Director shall, as appropriate, be guided by the findings and recommendations of the Biennial National Critical Technology Reports prepared pursuant to section 603 of the National Science and Technology Policy, Organization, and Priorities Act of 1976 (42 U.S.C. 6683).

(b) Under the Program established in subsection (a), and consistent with the mission and policies of the Institute, the Secretary, acting through the Director, and subject to subsections (c) and (d), may—

(1) aid industry-led United States joint research and development ventures (hereafter in this section referred to as "joint ventures" (which may also include universities and inde-

pendent research organizations), including those involving collaborative technology demonstration projects which develop and test prototype equipment and processes, through—

(A) provision of organizational and technical advice; and

(B) participation in such joint ventures by means of grants, cooperative agreements, or contracts, if the Secretary, acting through the Director, determines participation to be appropriate, which may include (i) partial start-up funding, (ii) provision of a minority share of the cost of such joint ventures for up to 5 years, and (iii) making available equipment, facilities, and personnel, provided that emphasis is placed on areas where the Institute has scientific or technological expertise, on solving generic problems of specific industries, and on making those industries more competitive in world markets;

(2) provide grants to and enter into contracts and cooperative agreements with United States businesses (especially small businesses), provided that emphasis is placed on applying the Institute's research, research techniques, and expertise to those organizations' research programs;

(3) involve the Federal laboratories in the Program, where appropriate, using among other authorities the cooperative research and development agreements provided for under section 12 of the Stevenson-Wydler Technology Innovation Act of 1980; and

(4) carry out, in a manner consistent with the provisions of this section, such other cooperative research activities with joint ventures as may be authorized by law or assigned to the Program by the Secretary.

(c) The Secretary, acting through the Director, is authorized to take all actions necessary and appropriate to establish and operate the Program, including—

(1) publishing in the Federal Register draft criteria and, no later than six months after the date of the enactment of this section, following a public comment period, final criteria, for the selection of recipients of assistance under subsection (b)(1) and (2);

(2) monitoring how technologies developed in its research program are used, and reporting annually to the Congress on the extent of any overseas transfer of these technologies;

(3) establishing procedures regarding financial reporting and auditing to ensure that contracts and awards are used for the purposes specified in this section, are in accordance with sound accounting practices, and are not funding existing or planned research programs that would be conducted in the same time period in the absence of financial assistance under the Program;

(4) assuring that the advice of the Committee established under section 10 is considered routinely in carrying out the responsibilities of the Institute; and

(5) providing for appropriate dissemination of Program research results.

(d) When entering into contracts or making awards under subsection (b), the following shall apply:

(1)*(A)* No contract or award may be made until the research project in question has been subject to a merit review, and has, in the opinion of the reviewers appointed by the Director and the Secretary, acting through the Director, been shown to have scientific and technical merit *and be of a nature and scope that would not be pursued in a timely manner without Federal assistance.*

(B) Each applicant for a contract or award under the Program shall certify that the applicant has made an effort to secure private market funding for the research project involved. That certification shall include a written narrative description of the efforts made by the applicant to secure that funding.

(2) In the case of joint ventures, the Program shall not make an award unless the award will facilitate the formation of a joint venture or the initiation of a new research and development project by an existing joint venture.

(3) No Federal contract or cooperative agreement under subsection (b)(2) shall exceed $2,000,000 over 3 years, or be for more than 3 years unless a full and complete explanation of such proposed award, including reasons for exceeding these limits, is submitted in writing by the Secretary to the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Science, Space, and Technology of the House of Representatives. The proposed contract or cooperative agreement may be executed only after 30 calendar days on which both Houses of Congress are in session have elapsed since such submission. Federal funds made available under subsection (b)(2) shall be used only for direct costs and not for indirect costs, profits, or management fees of the contractor.

(4) In determining whether to make an award to a particular joint venture, the Program shall consider whether the members of the joint venture have made provisions for the appropriate participation of small United States businesses in such joint venture.

(5) Section 552 of title 5, United States Code, shall not apply to the following information obtained by the Federal Government on a confidential basis in connection with the activities of any business or any joint venture receiving funding under the Program—

(A) information on the business operation of any member of the business or joint venture; and

(B) trade secrets possessed by any business or any member of the joint venture.

(6) Intellectual property owned and developed by any business or joint venture receiving funding or by any member of such a joint venture may not be disclosed by any officer or employee of the Federal Government except in accordance with a written agreement between the owner or developer and the Program.

(7) If a business or joint venture fails before the completion of the period for which a contract or award has been made, after all allowable costs have been paid and appropriate audits conducted, the unspent balance of the Federal funds shall be returned by the recipient to the Program.

(8) Upon dissolution of any joint venture or at the time otherwise agreed upon, the Federal Government shall be entitled to a share of the residual assets of the joint venture proportional to the Federal share of the costs of the joint venture as determined by independent audit.

(9) A company shall be eligible to receive financial assistance under this section only if—

(A) the Secretary finds that the company's participation in the Program would be in the economic interest of the United States, as evidenced by investments in the United States in research, development, and manufacturing (including, for example, the manufacture of major components or subassemblies in the United States); significant contributions to employment in the United States; and agreement with respect to any technology arising from assistance provided under this section to promote the manufacture within the United States of products resulting from that technology (taking into account the goals of promoting the competitiveness of United States industry), and to procure parts and materials from competitive suppliers; and

(B) either—

(i) the company is a United States-owned company; or

(ii) the Secretary finds that the company is incorporated in the United States and has a parent company which is incorporated in a country which affords to United States-owned companies opportunities, comparable to those afforded to any other company, to participate in any joint venture similar to those authorized under this Act affords to United States-owned companies local investment opportunities comparable to those afforded to any other company; and affords adequate and effective protection for the intellectual property rights of United States-owned companies.

(10) Grants, contracts, and cooperative assignments under this section shall be designed to support projects which are high risk and which have the potential for eventual substantial widespread commercial application. In order to receive a grant, contract, or cooperative agreement under this section, a research and development entity shall demonstrate to the Secretary the requisite ability in research and technology development and management in the project area in which the grant, contract, or cooperative agreement is being sought.

(11)(A) Title to any intellectual property arising from assistance provided under this section shall vest in a company or companies incorporated in the United [States.] *States or any other university or nonprofit awardee or subawardee (as those terms are defined by the Secretary) receiving financial assistance under this section, as agreed by the parties, notwithstanding the requirements of chapter 18 of title 35, United States Code. The United States may reserve a nonexclusive, nontransferable, irrevocable paid-up license, to have practiced for or on behalf of the United States, in connection with any such intellectual property, but shall not, in the exercise of such license, publicly disclose proprietary information related to the*

license. Title to any such intellectual property shall not be transferred or passed, except to a company incorporated in the United States, until the expiration of the first patent obtained in connection with such intellectual property.

(B) For purposes of this paragraph, the term "intellectual property" means an invention patentable under title 35, United States Code, or any patent on such an invention.

(C) Nothing in this paragraph shall be construed to prohibit the licensing to any company of intellectual property rights arising from assistance provided under this section.

(12) A large business may participate in a research project that is the subject of a contract or award under paragraph (3) only as a member of a joint venture that includes 1 or more small businesses as members.

(e) The Secretary may, within 30 days after notice to Congress, suspend a company or joint venture from continued assistance under this section if the Secretary determines that the company, the country of incorporation of the company or a parent company, or the joint venture has failed to satisfy any of the criteria set forth in subsection (d)(9), and that it is in the national interest of the United States to do so.

(f) When reviewing private sector requests for awards under the Program, and when monitoring the progress of assisted research projects, the Secretary and the Director shall, as appropriate, coordinate with the Secretary of Defense and other senior Federal officials to ensure cooperation and coordination in Federal technology programs and to avoid unnecessary duplication of effort. The Secretary and the Director are authorized to work with the Director of the Office of Science and Technology Policy, the Secretary of Defense, and other appropriate Federal officials to form interagency working groups or special project offices to coordinate Federal technology activities.

(g) In order to analyze the need for the value of joint ventures and other research projects in specific technical fields, to evaluate any proposal made by a joint venture or company requesting the Secretary's assistance, or to monitor the progress of any joint venture or any company research project which receives Federal funds under the Program, the Secretary, the Under Secretary of Commerce for Technology, and the Director may, notwithstanding any other provision of law, meet with such industry sources as they consider useful and appropriate.

(h) Up to 10 percent of the funds appropriated for carrying out this section may be used for standards development and technical activities by the Institute in support of the purposes of this section.

(i) In addition to such sums as may be authorized and appropriated to the Secretary and Director to operate the Program, the Secretary and Director also may accept funds from other Federal departments and agencies for the purpose of providing Federal funds to support awards under the Program. Any Program award which is supported with funds which originally came from other Federal departments and agencies shall be selected and carried out according to the provisions of this section.

(j) Notwithstanding subsection (b)(1)(B) and subsection (d)(3), the Director may grant an extension beyond the applicable deadline specified in subsection (b)(1)(B) or (d)(3) for a joint venture or single

applicant recipient of assistance to expend Federal funds to complete the project assisted with that assistance, if that extension—

(1) is granted with no additional cost to the Federal Government; and

(2) is in the interest of the Federal Government.

(k)(1) The Secretary, acting through the Director, may vest title to tangible personal property in any recipient of financial assistance under this section if—

(A) the property is purchased with funds provided under this section; and

(B) the Secretary, acting through the Director, determines that the vesting of such property furthers the objectives of the Institute.

(2) Vesting under this subsection shall—

(A) be subject to such limitations as are prescribed by the Secretary, acting through the Director; and

(B) be made without further obligation to the United States Government.

In carrying out this section, the Secretary, acting through the Director, shall ensure that the requirements of Circular No. A–110 issued by the Office of Management and Budget are met with respect to the valuation of cost-share items used by participants in the Program.

(l) AWARDS BASED ON COMPETITION.—All amounts appropriated for grants under subsection (b) for fiscal years beginning after the date of enactment of the Technology Administration Authorization Act for Fiscal Years 2000, 2001, and 2002 shall be used for grants awarded on the basis of general open competition.

[(j)**]** *(m)* As used in this section—

(1) the term "joint venture" means any group of activities, including attempting to make, making, or performing a contract, by two or more persons for the purpose of—

(A) theoretical analysis, experimentation, or systematic study of phenomena or observable facts;

(B) the development or testing of basic engineering techniques;

(C) the extension of investigative finding or theory of a scientific or technical nature into practical application for experimental and demonstration purposes, including the experimental production and testing of models, prototypes, equipment, materials, and processes;

(D) the collection, exchange, and analysis of research information;

(E) the production of any product, process, or service; or

(F) any combination of the purposes specified in subparagraphs (A), (B), (C), (D), and (E), and may include the establishment and operation of facilities for the conducting of research, the conducting of such venture on a protected and proprietary basis, and the prosecuting of applications for patents and the granting of licenses for the results of such venture; **[**and**]**

(2) the term "large business" means a business that—

(A) is not a small business; and

(B) has gross annual revenues in an amount greater than $2,500,000,000;

(3) the term "medium business" means a business that—

(A) is not a small business; and

(B) has gross annual revenues in an amount less than or equal to $2,500,000,000;

(4) the term "small business" means a small business concern, as described in section 3(a)(1) of the Small Business Act (15 U.S.C. 632(a)(1)); and

[(2)**]** *(5)* the term "United States-owned company" means a company that has majority ownership or control by individuals who are citizens of the United States.

STEVENSON-WYDLER TECHNOLOGY INNOVATION ACT OF 1980

SEC. 5. COMMERCE AND TECHNOLOGICAL INNOVATION. [15 U.S.C. 3704]

(a) ESTABLISHMENT.—There is established in the Department of Commerce a Technology Administration, which shall operate in accordance with the provisions, findings, and purposes of this Act. The Technology Administration shall include—

(1) the National Institute of Standards and Technology;

(2) the National Technical Information Service; and

(3) a policy analysis office, which shall be known as the Office of Technology Policy.

(b) UNDER SECRETARY AND ASSISTANT SECRETARY.—The President shall appoint, by and with the advice and consent of the Senate, to the extent provided for in appropriations Acts—

(1) an Under Secretary of Commerce for Technology, who shall be compensated at the rate provided for level III of the Executive Schedule in section 5314 of title 5, United States Code; and

(2) an Assistant Secretary of Commerce for Technology Policy, who shall serve as policy analyst for the Under Secretary.

(c) DUTIES.—The Secretary, through the Under Secretary, as appropriate, shall—

(1) manage the Technology Administration and supervise its agencies, programs, and activities;

(2) conduct technology policy analyses to improve United States industrial productivity, technology, and innovation, and cooperate with United States industry in the improvement of its productivity, technology, and ability to compete successfully in world markets;

(3) carry out any functions formerly assigned to the Office of Productivity, Technology, and Innovation;

(4) assist in the implementation of the Metric Conversion Act of 1975;

(5) determine the relationships of technological developments and international technology transfers to the output, employment, productivity, and world trade performance of United States and foreign industrial sectors;

(6) determine the influence of economic, labor and other conditions, industrial structure and management, and government policies on technological developments in particular industrial sectors worldwide;

(7) identify technological needs, problems, and opportunities within and across industrial sectors that, if addressed, could

make a significant contribution to the economy of the United States;

(8) assess whether the capital, technical and other resources being allocated to domestic industrial sectors which are likely to generate new technologies are adequate to meet private and social demands for goods and services and to promote productivity and economic growth;

(9) propose and support studies and policy experiments, in cooperation with other Federal agencies, to determine the effectiveness of measures with the potential of advancing United States technological innovation;

(10) provide that cooperative efforts to stimulate industrial innovation be undertaken between the Under Secretary and other officials in the Department of Commerce responsible for such areas as trade and economic assistance;

(11) encourage and assist the creation of centers and other joint initiatives by State of [or] local governments, regional organizations, private businesses, institutions of higher education, nonprofit organizations, or Federal laboratories to encourage technology transfer, to stimulate innovation, and to promote an appropriate climate for investment in technology-related industries;

(12) propose and encourage cooperative research involving appropriate Federal entities, State or local governments, regional organizations, colleges or universities, nonprofit organizations, or private industry to promote the common use of resources, to improve training programs and curricula, to stimulate interest in high technology careers, and to encourage the effective dissemination of technology skills within the wider community;

(13) serve as a focal point for discussions among United States companies on topics of interest to industry and labor, including discussions regarding manufacturing and discussions regarding emerging technologies;

(14) consider government measures with the potential of advancing United States technological innovation and exploiting innovations of foreign origin; and

(15) publish the results of studies and policy experiments.

(d) JAPANESE TECHNICAL LITERATURE.—

(1) In addition to the duties specified in subsection (c), the Secretary and the Under Secretary shall establish, and through the National Technical Information Service and with the cooperation of such other offices within the Department of Commerce as the Secretary considers appropriate, maintain a program (including an office in Japan) which shall, on a continuing basis—

(A) monitor Japanese technical activities and developments;

(B) consult with businesses, professional societies, and libraries in the United States regarding their needs for information on Japanese developments in technology and engineering;

(C) acquire and translate selected Japanese technical reports and documents that may be of value to agencies and

departments of the Federal Government, and to businesses and researchers in the United States; and

(D) coordinate with other agencies and departments of the Federal Government to identify significant gaps and avoid duplication in efforts by the Federal Government to acquire, translate, index, and disseminate Japanese technical information. Activities undertaken pursuant to subparagraph (C) of this paragraph shall only be performed on a cost-reimbursable basis. Translations referred to in such subparagraph shall be performed only to the extent that they are not otherwise available from sources within the private sector in the United States.

(2) Beginning in 1986, the Secretary shall prepare annual reports regarding important Japanese scientific discoveries and technical innovations in such areas as computers, semiconductors, biotechnology, and robotics and manufacturing. In preparing such reports, the Secretary shall consult with professional societies and businesses in the United States. The Secretary may, to the extent provided in advance by appropriation Acts, contract with private organizations to acquire and translate Japanese scientific and technical information relevant to the preparation of such reports.

(3) The Secretary also shall encourage professional societies and private businesses in the United States to increase their efforts to acquire, screen, translate, and disseminate Japanese technical literature.

(4) In addition, the Secretary shall compile, publish, and disseminate an annual directory which lists—

(A) all programs and services in the United States that collect, abstract, translate, and distribute Japanese scientific and technical information; and

(B) all translations of Japanese technical documents performed by agencies and departments of the Federal Government in the preceding 12 months that are available to the public.

(5) The Secretary shall transmit to the Congress, within 1 year after the date of enactment of the Japanese Technical Literature Act of 1986, a report on the activities of the Federal Government to collect, abstract, translate, and distribute declassified Japanese scientific and technical information.

(e) [Omitted.]

(f) EXPERIMENTAL PROGRAM TO STIMULATE COMPETITIVE TECHNOLOGY.—

(1) IN GENERAL.—The Secretary, [acting through the Under Secretary,] *acting through the National Institute of Standards and Technology,* shall establish for fiscal year 1999 a program to be known as the Experimental Program to Stimulate Competitive Technology (referred to in this subsection as the "program"). The purpose of the program shall be to strengthen the technological competitiveness of those States that have historically received less Federal research and development funds than those received by a majority of the States.

(2) ARRANGEMENTS.—In carrying out the program, the Secretary, [acting through the Under Secretary,] *acting through the National Institute of Standards and Technology,* shall—

(A) enter into such arrangements as may be necessary to provide for the coordination of the program through the State committees established under the Experimental Program to Stimulate Competitive Research of the National Science Foundation; and

(B) cooperate with—

(i) any State science and technology council established under the program under subparagraph (A); and

(ii) representatives of small business firms and other appropriate technology-based businesses.

(3) GRANTS AND COOPERATIVE AGREEMENTS.—In carrying out the program, the Secretary, [acting through the Under Secretary,] *acting through the National Institute of Standards and Technology,* may make grants or enter into cooperative agreements to provide for—

(A) technology research and development;

(B) technology transfer from university research;

(C) technology deployment and diffusion; and

(D) the strengthening of technological capabilities through consortia comprised of—

(i) technology-based small business firms;

(ii) industries and emerging companies;

(iii) universities; and

(iv) State and local development agencies and entities.

(4) REQUIREMENTS FOR MAKING AWARDS.—

(A) IN GENERAL.—In making awards under this subsection, the Secretary, [acting through the Under Secretary,] *acting through the National Institute of Standards and Technology,* shall ensure that the awards are awarded on a competitive basis that includes a review of the merits of the activities that are the subject of the award.

(B) MATCHING REQUIREMENT.—The non-Federal share of the activities (other than planning activities) carried out under an award under this subsection shall be not less than 25 percent of the cost of those activities.

(5) CRITERIA FOR STATES.—The Secretary, [acting through the Under Secretary,] *acting through the National Institute of Standards and Technology,* shall establish criteria for achievement by each State that participates in the program. Upon the achievement of all such criteria, a State shall cease to be eligible to participate in the program.

(6) COORDINATION.—To the extent practicable, in carrying out this subsection, the Secretary, [acting through the Under Secretary,] *acting through the National Institute of Standards and Technology,* shall coordinate the program with other programs of the Department of Commerce.

(7) REPORT.—

(A) IN GENERAL.—Not later than 90 days after the date of the enactment of the Technology Administration Act of 1998, the Under Secretary shall prepare and submit a report that meets the requirements of this paragraph to the Secretary. Upon receipt of the report, the Secretary shall transmit a copy of the report to the Committee on Com-

merce, Science, and Transportation of the Senate and the Committee on Science of the House of Representatives.

(B) REQUIREMENTS FOR REPORT.—The report prepared under this paragraph shall contain with respect to the program—

(i) a description of the structure and procedures of the program;

(ii) a management plan for the program;

(iii) a description of the merit-based review process to be used in the program;

(iv) milestones for the evaluation of activities to be assisted under the program in fiscal year 1999;

(v) an assessment of the eligibility of each State that participates in the Experimental Program to Stimulate Competitive Research of the National Science Foundation to participate in the program under this subsection; and

(vi) the evaluation criteria with respect to which the overall management and effectiveness of the program will be evaluated.

ADDITIONAL VIEWS OF SENATOR HOLLINGS

ADVANCED TECHNOLOGY PROGRAM

The Advanced Technology Program (ATP) is an important investment in American economic competitiveness. It supports American industry's own efforts to develop new cutting-edge, next-generation technologies—technologies that will create the new industries and jobs of the 21st century. However, the ATP does not fund the development of commercial products. Instead, it provides matching funds to both individual companies and joint ventures for "pre-product" research on these high-risk, potentially high-payoff technologies. These technologies include promising new ideas in manufacturing, advanced electronics, and new materials.

Why do we need the ATP? The answer is simple: to keep America competitive and to create jobs. Long-term technology has become the key to future U.S. prosperity at precisely the time that global competition, downsizing, and shareholder pressures are forcing American companies to focus scarce research dollars on short-term projects. The Commerce Department estimates that these market pressures compel companies to spend up to 90 percent of their research funding on projects that will pay off in one to five years. As a result, U.S. companies, small and large, have serious trouble funding long-term, next-generation technologies that can facilitate the building of new industries but will not pay for ten to fifteen years. Moreover, the U.S. Government, historically, has supported long-term research in only a few key sectors—an approach very different from our foreign competitors.

The ATP's sole aim is to develop new basic technologies that would not be pursued soon or at all because of technical risks and other obstacles that discourage private-sector investment. The ATP does not support product development and is modeled on similar Federal research programs that have long helped a few sectors such as agriculture, the aircraft industry, and energy technology. The program particularly helps small technology companies. To date, the ATP has made 468 cost-sharing awards, involving 1,067 companies and research partners in 43 states.

Although ATP competitions have been in existence for only ten years, already a real difference can be seen from the early awards that have been completed. A March 1999 study found that future returns from just three of the completed ATP projects—improving automobile manufacturing processes, reducing the cost of blood and immune cell production, and using a new material for prosthesis devices—would pay for all projects funded to date by the ATP. Measurement and evaluation have been part of the ATP since its beginning. The benefits of the program are well-documented through individual case studies; the Secretary's 1997 review; the February 1998 Development, Commercialization, and Diffusion

Study; and the March 1999 review of the Performance of Completed Projects. What these analyses show time and time again is that the ATP is stimulating collaboration, accelerating the development of high-risk technologies—and paying off for the nation.

In FY 2000, total program funding for the ATP is $201.3 million which will support $50.7 million in new awards. The reported bill, on the other hand, authorizes $146.9 million in FY 2001 for the ATP. A total program at this level would drastically constrict funding for new ATP awards to approximately $16.4 million in FY 2001.

New awards are the lifeblood of the program. This year's competition brought in 417 proposals from industry, totaling nearly $900 million in requested ATP funding with an industry cost-share of over $681 million. Only $50.7 million was available for new awards. These proposals include 545 participants (not including subcontractors) from industry, academia and other research organizations. In addition, the ATP staff reviewed 271 pre-proposals prior to the competition deadline. Numbers this large clearly demonstrate significant interest on the part of industry.

Fluctuations in funding would send a message to industry that the future of the ATP is once again uncertain. This will halt progress made in encouraging industry to identify forward-looking, risk-sharing R&D of new enabling technologies. On-again, off-again first-year funding availability for ATP plays into the hands of those who argue that the Federal government is an unreliable partner over the long term.

As industry continues to focus more of its R&D on near term product development, there will be fewer sources of support for the type of fundamental and enabling technology R&D that ATP cost-shares. Industry is approaching the ATP to co-fund truly revolutionary research, ranging from tissue engineering to advanced learning technologies. These are new technical areas that are becoming increasingly important to the U.S. economy and the quality of life of American citizens.

MANUFACTURING EXTENSION PARTNERSHIP

The Manufacturing Extension Partnership (MEP) supports a network of locally-run centers which provide technical advice and consulting to small manufacturing companies in all fifty states and Puerto Rico. Many of these firms lag behind foreign competitors in technology and operations, leading larger American firms to look increasingly for offshore suppliers. One of the chief challenges facing small- and medium-sized manufacturers is adapting and using electronic commerce technologies to do business with larger firms.

The reported bill authorizes $124.2 million in FY 2001, $119.2 million in 2002, and $109.2 million in FY 2003 for MEP. The evidence is clear, however, that these proposed funding levels are unrealistic in the out years. The increased funding in FY 2001 would allow the program to fund more field agents at the Centers and reach more small- and medium-sized manufacturers. In addition, MEP could focus on the challenge of electronic commerce by developing more technical capacity and new services to help small- and medium-sized manufacturers use new technology to compete and win new business. The reported bill assumes that one year of in-

tense focus on electronic commerce will be sufficient to keep small manufacturers competitive. I disagree. MEP will need to continue this effort—with at least level funding—in order to reach more companies and to help them use emerging technologies.

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